

Objectives

- To exploit the synergy between satellite products and land-atmosphere interaction models for resolving water and energy cycles at a range of scales.
- To optimally integrate high-resolution precipitation and radiation budget datasets in hydrological models to support flood forecasting for medium to large size catchments.
- To evaluate the potential of satellite/NWP products for optimal management of reservoir operation.
- To contribute to the development of a hydrological error assessment network by establishing Hydrological Observatories (HO) at different hydro-climatic regimes.

Questions

- **What is the current state of hydrological predictability from existing constellation of satellite precipitation observations and NWP forecasts, and what are the improvements through advances in satellite retrievals and NWP data assimilation?**

These questions need to be addressed using hydrological error simulations for a variety of storm and watershed characteristics, scales and climate regimes

- **What are the optimal precipitation products (or combination of products) and resolutions in terms of prediction of various hydrological variables of interest (runoff, soil moisture, water & energy fluxes, etc.)?**

Is there a temporal or spatial scale below which it is simply not practical to worry about "validation" of the GPM satellite obs in the hydrologic realm?

- **What improvements are obtainable in the decision making process by using the satellite based products?**

How do the results of integrated or hydrologic validation feedback to retrieval algorithms?

- **Modelling uncertainty (complexity vs data availability)**

is there some minimal suite of parameters/processes that must be represented in order for the models to be considered as an integrated GV tool?

Applications

- **Flash Floods (complex terrain)**
- **Large river flows (daily to monthly)**
- **Water cycle (soil moisture, ET, etc.)**
- **Water management (reservoir, warnings, etc.)**